

Automatic-Inflatable

What To Know B

The U.S. Coast Guard breathed new life into boating safety in September 1996. That's when, after years of testing and review, it approved manually activated, inflatable life jackets. Approval as Type III personal flotation devices (PFDs) meant boaters didn't have to wear the life jackets—just carry one per person on board.

In August 2000, the Coast Guard Life Saving and Fire Safety Standards Division took another deep breath and approved life jackets that inflate automatically when they touch the water. These, however, were approved on a conditional basis as Type V PFDs, which means they may be counted toward the Coast Guard requirement of one per person **only if they are worn**. So, if an auto-inflatable is your choice, you have to wear it at all times or also keep an inherently buoyant life jacket or Type III inflatable aboard to meet the requirement.

Unlike the inherently buoyant vest, inflatables use a carbon dioxide cylinder to blow up an air bladder. In an auto-inflatable, the bladder encircles the neck. Straps over the shoulders and across the back cinch it to the torso. It is designed to float average adults with their heads out of the water and turns most of them face-up. The auto-inflatable also has an oral-inflation tube.

Two inflator mechanisms meet Coast Guard standards. Both activate when a water-soluble material dissolves, releasing a spring-trigger mechanism. The trigger drives a bayonet pin into



Four manufacturers now have Coast Guard-approved Type V automatic-inflatable life jackets on the market.

the CO₂ cartridge and, poof! the air bladder unfolds and inflates within 10 seconds.

Besides looking very different, the principal difference between the two inflators is in how you put them in the “ready” mode. The Halkey-Roberts inflator uses an “auto capsule,” which contains a spring-loaded plunger, topped by a bobbin. When wet, the bobbin dissolves, releasing the plunger to pierce the cylinder.

To re-arm the unit, unscrew the auto capsule and replace the bobbin, which comes with a fresh cylinder in the manufacturer's re-arming kit. One built-in safety feature is a window at the bottom of the capsule that shows green when in

Inflatable Life Jackets: Before They Blow

the ready position. It shows red if the bobbin is not in place or if it has been fired.

The Secumar inflator has two other red-green safety indicators. One shows red unless the pill is in place, and another at the cylinder connection shows red until the cylinder is screwed down enough.

You can activate both types of inflators by yanking the lanyard like those on manual life jackets. Each has a green, plastic pin that holds the trigger arm in position. When the unit activates, either automatically or manually, the pin shears off, exposing a red background.

Three models carry spare cylinders in a pocket to re-arm the device for manual operation, a handy feature if the life jacket inflates accidentally. The Stearns jacket doesn't have an extra cylinder because the inflator isn't designed to be used manually. Like all others, though, it can be inflated orally.

One of the drawbacks faced by auto-inflatable manufacturers is a tendency of their devices



One of the new auto-inflatable life preservers has an indicator that shows whether the inflator is in the ready position (left) or has been used (right).

to inflate prematurely if raindrops or spray should seep inside and dissolve the pill or bobbin. The approved devices are rated to resist premature inflation in all weather conditions.

With the automatic inflator armed, green showing in all the right places, the bladder folded according to instructions, and the manually pulled lanyard dangling within easy reach, your inflatable life jacket is ready to save your life, right? Probably, but there's only one way to be certain with inflatables. You must remove the CO₂ cylinder and visually inspect the seal in its neck. If that's intact, the unit is ready. If there's a hole in it, you're out—literally. If you decide to use inflatables on your boat, make it a habit to



Always inspect the cylinder to be sure the seal has not been punctured.

U.S. Coast Guard-Approved Type V Inflatable Life Jackets With Automatic Back-Up

Company	Eastern Aero Marine	Mustang Survival	Sporting Lives, Inc.	Sporting Lives, Inc.	Stearns Mfg. Co.
Name	EAM Triumph II	AirForce	SOSPENDERS Sport Model	SOSPENDERS World Cl.	Stearns Ultra
Model	PO1080-103	MD3001	25ASPT-WD	38 ASTD	1339
External color	yellow, orange, navy	navy, black or red	orange	navy	navy, orange, royal blue
External color, when inflated	yellow	yellow	yellow	yellow	yellow
Type of inflator mechanism	Halkey-Roberts	Halkey-Roberts	Halkey-Roberts	Halkey-Roberts	Secumar
Size of CO ₂ cartridge	33 gram	33 gram	25 gram	38 gram	33 gram
Spare cartridge comes in jacket?	yes	yes	yes	yes	no
Buoyancy, when fully inflated	35 pounds	35 pounds	24 pounds	38 pounds	35 pounds
For use by people weighing more than	80 pounds	80 pounds	80 pounds	80 pounds	90 pounds
Reflective tape when inflated?	no	yes	no	yes	yes
Available with ORC* harness?	yes, PO1080-203	no	no	yes, 38AHR-P	yes, Ultra 1343
Suggested List Price	\$131.60	\$175.00	\$99.00	\$135.00	\$149.99

*Offshore Racing Council

remove the cylinder and check its seal every time you don one of the life jackets.

No inflator mechanism is available yet that can tell you at a glance whether the seal on a CO₂ cylinder is intact. That's the main reason the Coast Guard gave auto-inflatables "conditional" Type V approval. According to manufacturers, cylinder-seal indicators are in development, and, once they are perfected to meet Coast Guard requirements, the conditional restriction could be lifted.

Although manual and auto-inflatable life jackets offer a safe and comfortable option, they are not for all boaters. To start with, they are not approved for children, and they are not recommended for certain types of water sports, such as watercraft riding or water-skiing. Poor swimmers also shouldn't use them.

Inflatable life jackets are not foolproof. They require more attention than inherently buoyant devices, and you must be familiar with their use. That's why they come with an owner's manual. By their design, auto-inflatables require regular inspection. Be careful re-arming them because the various models use three different

sized CO₂ cylinders, their own trigger-arm shear pins, and two styles of water-sensitive release components.

If you're willing to make the effort, the added buoyancy, plus the "wearability" factor of inflatable life jackets, make them an attractive safety option that could deflate boating-accident statistics. They might even save your life. ■

The Naval Safety Center does not endorse any product mentioned in this article. The information is provided to acquaint you with choices in PFDs so you can make an informed decision that will increase your boating enjoyment and safety. We thank FTC(SS) Jay Bramble, formerly of the Afloat Safety Programs Directorate, for bringing this material to our attention. We also thank BOAT/U.S. Magazine for allowing us to reprint the article. For more information, refer to Foundation Findings No. 30, "Inflatable Life Jackets Make the Grade," published in BOAT/U.S. Magazine, May 1998. You also can find it on their website at www.boatus.com, or call 1-800-336-BOAT for a copy.—Ed.